

be furnished with an iron plate in the sole, and the heel of both boots should be low. Especial care should be also taken to prevent any pressure on that part of the cicatrix corresponding to the anterior articular surface of the astragalus, the latter being from its situation but slightly covered by soft parts. The formation of the inferior flap *previous to the opening of the articulation* (as practised by Mr. Syme) does not appear to possess any advantage that may not be secured by obvious precautions in the employment of the ordinary method.

Chopart's procedure seems to commend itself by its simplicity, as preferable to the operose and more painful method of Hey, which, although it saves to some an additional inch of the member, has not been shown to furnish a more useful stump.

It appears that in some of the later amputations, the difficulties of disarticulation in the tarso-metatarsal joints have been overcome, or rather evaded, by the employment of the saw, irrespective of the articular surfaces. This method seems to have proved satisfactory, although obviously open to theoretical objection.—*Dublin Med. Press*, Feb. 3d, 1847.

47. *Report of a Committee of the Surgical Society of Ireland, relative to the use and effects of Sulphuric Ether.*—A committee, consisting of Dr. Macdonnell, Dr. Bellingham, and Mr. Tuffnell, having been appointed by the Council of the Surgical Society to conduct some experiments with the vapour of sulphuric ether at the last meeting of the society, Mr. Tuffnell proceeded to read a report of the phenomena exhibited on that occasion, and the remarks of the committee upon the use of this agent:—

CASE I.—Mr. John Halahan, æstat. 19, healthy, but of rather delicate nervous temperament, inhaled (having his head and limbs held, and nose compressed), for two minutes, during which time the pulse fell from 130 to 44 beats in the minute, and after removing the apparatus from the mouth, rose to 108, remaining steadily at this point after restoration to consciousness.

On the ether taking effect, a profuse cold sweat burst out upon the forehead, gradually appearing from the period of insensibility, and increasing during recovery.

The apparatus having been removed from his mouth, he remained for nearly two minutes perfectly still and tranquil; the respiration not hurried; the pupil slightly dilated; eyes open and fixed; conjunctiva not much congested, and exhibiting no sign of having otherwise suffered from the experiment.

After this period he slowly flexed and extended all his limbs, the countenance at the same time being contorted, and expressive of *amazement, hesitation, and doubt*, but not of pain.

He was forcibly pinched during the whole period, but until the elapse of one minute and thirty-five seconds, he did not take any notice of this fact, though on restoration to consciousness, his first attention was directed to this infliction of pain.

He recovered slowly, giving the following description of his feelings from the first moment of inhaling:—

“ 12, Stephen’s-green, January 21, 1847.

“ SIR—In compliance with your wish, I beg leave to send you the following account of the effects of the sulphuric ether on me. While inhaling it, I experienced no particular sensation, except that of great difficulty of breathing. I could not avoid coughing three or four times. I remember having extended my legs, and stretched out my hands, once or twice, just before I was fully under its influence. I think, however, that by a strong effort, I could have prevented myself doing this. I have no recollection of the tube having been taken from my mouth, and did not distinguish between the time when about to be, and when I was completely under the influence of the ether. While under its influence, I believed that I was dreaming, but thought that I knew I was: what was occurring in reality appeared to be in the dream. I thought I had made myself appear very ridiculous by being so conspicuous. I heard many observations made by the gentlemen about me; but felt nothing the whole time. I saw all the gentlemen directly before me; they appeared to be looking fixedly at me. I observed that one of them, whom I knew, turned round and spoke to some one behind him. I afterwards ascertained he had done so. During the whole time I thought I heard a

great noise, as if I was very close to a mill, which was moving rapidly round: this sensation increased as I recovered. When recovering I felt as if I were awaking. The first thing that made me know I had not been dreaming was Dr. Leeson stretching out his hand to shake hands with me, and his asking if I knew where I was. I had no idea how long I was under the influence of the ether. For nearly half an hour after I had recovered from the immediate effects, I felt in a stupid state, as if not quite awake. I felt sick until I went to bed. I slept well all night, and felt quite well the next morning, and have been so since.

“My breath had a strong smell of the ether even until after breakfast.

“I am much afraid that you will find this account very confused.—I am, sir, your obedient servant,

J. H. HALAHAN.

“—Tuffnell, Esq., F. R. C. S. I.”

CASE II.—Stout, athletic sanguineous-tempered young man, in robust health, inhaled for two minutes and a quarter (under restraint), during which his pulse fell from 120 to 40 beats in the minute. The pupil became dilated to a considerable degree; the conjunctiva was gorged with blood; the temporal vessels greatly distended; the face became slightly livid, and shortly before coming under the influence of the ether, the lower extremities were agitated, and he shook the forearms as if wishing to get hold of the apparatus and remove it from his mouth, these symptoms evidently evincing distress from a feeling of suffocation.

On the tube being removed from his mouth, he assumed an attitude of playful sparring, which was speedily followed by violent muscular efforts, the countenance being distorted, and the face turgid with blood, the features showing no expression but that of vacancy and distress. In this state he remained for three minutes, struggling very violently, and demanding to be set free, requiring much restraint. He recovered gradually, unaware of everything, and saying he felt no pain or annoyance. Water and cold wet cloths were repeatedly thrown and flapped in his face, but he knew nothing of this treatment, or of any one having pinched his hand.

“January 18, 1847.

“DEAR SIR—According to your request, I briefly state the different and varying sensations I felt whilst under the effects of sulphuric ether on Saturday night week. The particulars are as follows:—

“On my taking the chair, I felt much excited; Dr. Benson said my pulse was 120—its usual pulsation is about 70. When the apparatus was applied to my mouth, I could not breathe, owing, I believe, to a constriction of the glottis. When I found this, I was determined to hold on as long as I could, as I heard the first student who presented himself say he was affected in a similar manner. I therefore opened wide my mouth, and let the vapour of the ether in, when in about half a minute I found I could breathe quite freely; almost immediately my sight became very acute, shortly followed by a slight dimness, objects appearing to me to fluctuate. At this time breathing, I imagine, was solely carried on by the aid of the diaphragm. I then felt something rising on the right side of my head, followed by a most thundering noise.

“It may be right for me to mention that my head was bent to the right side; my brain then became very much disturbed, and if I may so express myself, as if boiling, with a dull singing in my ears. I then heard that my pulse was 40, and from this time I became unconscious of what occurred, until I found myself standing up in a most furious and violent passion. I was much perplexed and irritated with all about me, but for what reason I knew not. I recovered my senses shortly after, and whilst so doing, the noise both in my head and ears grew louder and louder.

“I may also add, I was not aware that cold water had been thrown on me, nor did I feel myself wet until I got home, nor even then, until I opened my clothing and found my shirt wet. These particulars, which I have endeavoured to state, are the real and unfeigned sensations I felt whilst under the effects of sulphuric ether at the Surgical Society on Saturday night week.—I am, dear sir, yours most respectfully,

WILLIAM HENRY ARTHUR, M. S.

“Dr. Bellingham.”

opening of the sac and division of the stricture, the patient is perfectly sensible.

Two other cases were submitted to the influence of the vapour, but both refused to persevere with the inhalation till any effect could be produced.

*Remarks.*—From these two different series of phenomena, it would appear that constitution or idiosyncrasy modifies the action of the vapour. That in some such muscular action is excited as to preclude the possibility of operating at this time; that in others a passive state most favourable for the use of the knife is produced.

1. That when practicable, therefore, a trial should be made prior to the operation.

2. That where there is reason to apprehend any derangement of the cerebral circulation or organic disease of the heart, it should be employed with the greatest caution.

3. That the lungs being primarily influenced, and much irritation in the air passages sometimes produced, as evinced by the frequent cough, in persons labouring under disease of the lungs it might be injurious.

4. That having as yet had no opportunity of conducting experiments on the lower animals, it is impossible for your committee to say with what safety or to what extent the inhalation might be carried and the effect reproduced after partial restoration to consciousness.

5. That the operations most fitted for its employment are those where large and painful incisions have to be made, as in amputation—cases that can be speedily terminated.

The apparatus used on these occasions consisted of a double-headed glass bottle, in one of which was placed a glass funnel containing a conical shaped sponge soaked in sulphuric ether.

To the other was attached a flexible mouth-piece for inhalation, and a second opening for the expired air, which was prevented from re-entering the bottle by means of a valve, the peculiar mechanism of which was exhibited to your committee by the inventor, Mr. Millikin, surgical instrument maker to the college.

The whole apparatus was constructed by Mr. Millikin, of the efficiency of which your committee beg to express their entire approbation.

Dr. BUTCHER said, before the report which has just been read passes from this society, there are some points on which I would wish to make a few observations. We all know that a state of insensibility can be produced by the inhalation of ether, and we likewise know it creates in some subjects symptoms the most alarming in their character, such as delirium ferox, tetanic convulsions, and prolonged stupor. What I wish particularly to dwell on is its practical bearing in reference to capital operations. I would wish to ask any gentleman who has operated while the patient was under the influence of ether vapour, whether union by the first intention followed as rapidly as after the ordinary method; because from what I have observed myself, I doubt not there is a remarkable effect produced on the capillaries of the part which is inimical to that result. It has been trumpeted about as a wonderful agent prior to capital operations. Now, let us see its applicability. In *amputation*, the muscles are cut when they are relaxed and in a flaccid state, and their power of retraction removed: here, then, unless the bone be cut much higher than is required by the ordinary method, a conical stump is likely to follow; for when the nervous energy is again restored to the divided muscles, they are drawn up far beyond what was calculated upon by the surgeon; in many cases we have not the option to accommodate ourselves to this new method. In *lithotomy*, how often have I seen Mr. Cusack extract the stone in a few seconds. Would it for this momentary pain, then, be desirable to subject the patient to so dangerous a remedy? Granted even that it would, does the insensible condition produced facilitate the steps of the operation? (This is the point on which I wish my objection to hinge.) I think not, for all the parts lie dead and flaccid before the knife, as it were, in the dead subject, the operation on which is admitted by all to be more difficult than in the living; of course able hands may surmount all difficulties, and I would say unhappily it is so with regard to this dangerous therapeutic agent: therefore we have such names as Liston, Syme, Key, &c., giving it an ephemeral brilliancy, a false colour. In *hernia*, the influence which it exerts, even in its most favourable bearing, cannot be continued long enough, and when you come to the most critical part of the operation, the

Aneurism of the extremities is, I am proud to say, by the surgeons of this city almost removed from the list of capital operations, by the substitution of pressure, while the most sanguine expectant in the use of ether cannot hope to keep his patient under its influence while securing the vessels either in the neck or abdomen. We have, on the high authority of Dr. Jacob, its inapplicability to the more delicate operations on the eye. With regard to tooth-drawing and such like minor matter, I sincerely hope the *curiosity*, at least amongst medical men, has been sufficiently satisfied, for it is a kind of sporting with life beneath the sagacity of a medical practitioner. There is one class of cases, and only one, where I think it will always be advantageous, and to which I conceive it peculiarly applicable—that is, where there is an *indefinable* terror of the knife, when the person almost in every instance predicts with accuracy the result of operation in death: this I have seen verified in three instances myself, though for trifling operations. The supposed advantages thus arising from the inhalation of ether in either amputation, lithotomy, hernia, aneurism, operations on the eye, tooth-drawing, &c., &c., will, I am convinced, evaporate as quickly as the fluid employed; the only class of cases at all to which it is applicable, being those I have last mentioned.

Dr. GEOGHEGAN begged leave to observe that two cases had lately been recorded; the one, an operation for hernia, by Mr. Morgan of London; the other, lithotomy, by Mr. Charles Guthrie, the patients in each case having been first placed under the influence of the ether, and from all the statements made, there was no reason to conceive that any bad consequences had resulted. Mr. Guthrie's patient remained eighteen minutes under its influence, and on being questioned after the operation, stated that he had experienced no disagreeable sensation, that he had not the slightest consciousness of pain, though perfectly aware of what was going on around him. For instance, the operating theatre was so crowded with spectators that some were looking through the sky-lights from the roof, and the man mentioned this very circumstance of his own accord, when speaking of his sensations during the operation. The fact of a patient's retaining consciousness while sensation is destroyed, appeared to Dr. Geohegan a point of much interest in connection with this subject. The excito-motory function of the spinal marrow would appear to be partially unimpaired, for the limb is frequently seen to move or shrink, as it were, from the knife, yet there exists a total insensibility to pain. It would hence also appear that in some instances the functions of the spinal marrow are influenced concurrently with those of the brain, and possibly through the intervention of an action on the latter organ, while in others they are independently affected.

Dr. HARGRAVE observed in reference to the question as to what cases of inhalation of ether ought not to be employed, that the results of experience alone could enable us to decide. There was one operation, however, he considered, in which the surgeon, with a due regard to his own character or the life of his patient, could not think of applying it; he alluded to the operation of tracheotomy; very serious consequences he apprehended might result from its use here. Mr. Orr could relate to the society the particulars of a case experimented on by him at the City of Dublin Hospital, and which was accompanied by phenomena entirely different from anything observed in America, in England, or in this city before—phenomena of such a serious nature, he would say, as to warn the profession against a hasty or indiscriminate use of this vapour.

Mr. ORR said the case in which he had used the ether was one in which he wanted to perform Mr. Syme's operation for lipoma of the testicle, considering it a sufficiently painful operation to induce him to try the effect of the vapour. Drs. Hargrave and Benson took notes of the steps of the operation, and it was found—as mentioned recently by Mr. Tufnell—that the pulse, which at the time of the patient's being placed on the table, was at 110, in about two minutes fell rapidly to 40; it was exceedingly weak and compressible also, though the sounds of the heart were very distinctly heard by the ear placed over the chest. At the end of three minutes, a certain degree of consciousness was retained, and the relaxation of the muscular system was such that an involuntary discharge of urine and feces took place, followed in a few seconds more by stertorous breathing. The man then became completely unconscious and insensible to pain. At the expiration of eight minutes, the operation was very nearly completed, and the patient answered

questions, though still insensible to pain. After the great muscular relaxation alluded to, some strong contractile efforts were subsequently made; the toes were flexed with considerable force, and the sterno-mastoid muscle was observed by Dr. Hargrave to be in a state of extreme rigidity.—*Dublin Medical Press*, Feb. 10, 1847.

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### OPHTHALMOLOGY.

48. *Foreign bodies in the Eye.*—Professor JACOB made a very interesting communication on this subject to the Surgical Society of Ireland, a report of which we transfer to our pages from the *Dublin Medical Press* of Dec. 9th, 1846.

The Professor states that “in breaking or dressing stones, it frequently happens to stone-cutters and others that a particle of the stone is driven with considerable force into the eye. This it was that happened in the case to which he was about to direct the attention of the society. A particle of stone had been so projected, and lay in the anterior chamber between the cornea and iris, but the interesting fact connected with this was that it should have remained in that situation for four years without having effected the destruction of the organ. He had extracted it the other day, and had every hope that he would ultimately be able to save the eye. The lens is opaque, and the pupil eccentric, and it will probably be yet necessary to break up the lens more effectually than could have been done in the course of the operation of removing the foreign body. In cases of this kind, those men must often suffer who are employed in dressing mill-stones, cutting or breaking silicious rocks; such accidents seldom occurring from cutting granite or limestone. The fragment in the present case was at least a fourth of an inch long and a sixth in diameter, and very sharp. Cases in which foreign bodies of this description had passed into the eye without destroying it, have (Professor Jacob observed) been recorded by Mackenzie, Lawrence, Wardrop, and others, so that, as he had before remarked, there was nothing very new in the case now before the society, but its pathological interest he considered of the first importance, showing as it does that when a foreign body of such a description finds its way into, and remains for such a lengthened period, in an organ of all others in the body so profusely supplied with nerves and vessels without causing its destruction, it need not to be considered necessary to search with such anxiety after foreign substances that find their way into other and so much less important parts of the body, under the apprehension that they will make their way eventually to the surface, instead of which they often remain at rest after a little time, if the part be kept quiet.

Another case had come under his care some years ago: it was that of a little boy into whose eye a portion of a copper gun-cap had passed through the pupil, and lodged in the crystalline lens itself, where it lay without producing any distress or mischief for two or three years. But the very curious fact connected with it was, that the copper never lost any of its metallic brilliancy, and never became even in the slightest degree corroded or oxidized. This case he temporized with, and the sequel proved very instructive: the lens became absorbed, and the bit of copper got entangled in the opaque capsule, and believing that it might not be possible to extract it, the patient being young and unmanageable, he still continued to temporize with the case, and lost sight of the boy for some time.

In about a year after, however, he again came under his notice, and now the copper cap had disappeared, and the anterior and posterior chambers were filled with blood, as if from some recent injury. The pupil was dilated, but the eye was spoiled. The cap being nowhere visible, it was probable that it had fallen to the bottom of the eye, so Professor Jacob considered it better to leave the eye alone, and the case was lost sight of. It is not alone in the anterior chamber, or in contact with the iris or crystalline lens, that bodies of this kind stick, but sometimes under the conjunctiva itself, though (Professor Jacob observed) from the toughness of the parts, it did not often happen; this, however, occurred in the case of a young lady, whose younger brother, in playing with a toy-gun, drove a portion of the cap into her eye, where it lay under the conjunctiva, its situation